

United States Department of Agriculture Natural Resources Conservation Service

Ecological Site Description

Site Type: Rangeland

Site Name: Saline Lowland-Drained (SLdr) 5-9" Wind River Basin Precipitation Zone

Site ID: R032XY240WY

Major Land Resource Area: 32 – Northern Intermountain Desertic Basins

Physiographic Features

This site normally occurs on land that receives overflow or runoff from adjacent slopes.

Landform: alluvial fans, drainage ways & stream terraces

Aspect: N/A

	<u>Minimum</u>	<u>Maximum</u>
Elevation (feet):	4500	6600
Slope (percent):	0	6
Water Table Depth (inches):	None within 60 inches	
Flooding:		
Frequency:	None	occasional
Duration:	None	brief
Ponding:		
Depth (inches):	0	0
Frequency:	None	rare
Duration:	None	brief
Runoff Class:	negligible	low

Climatic Features

Annual precipitation ranges from 5-9 inches per year. The normal precipitation pattern shows peaks in May and June and a secondary peak in September. This amounts to about 50% of the mean annual precipitation. Much of the moisture that falls in the latter part of the summer is lost by evaporation and much of the moisture that falls during the winter is lost by sublimation. Average snowfall is about 20 inches annually. Wide fluctuations may occur in yearly precipitation and result in more dry years than those with more than normal precipitation.

Temperatures show a wide range between summer and winter and between daily maximums and minimums, due to the high elevation and dry air, which permits rapid incoming and outgoing radiation. Cold air outbreaks from Canada in winter move rapidly from northwest to southeast and account for extreme minimum temperatures. Chinook winds may occur in winter and bring rapid rises in temperature. Extreme storms may occur during the winter, but most severely affect ranch operations during late winter and spring.

High winds are generally blocked from the basin by high mountains, but can occur in conjunction with an occasional thunderstorm.

Site Type: Rangeland
MLRA: 32 – Northern Intermountain Desertic Basins

Saline Lowland-Drained (SLdr) 5-9 WR
R032XY240WY

Growth of native cool-season plants begins about April 1 and continues to about July 1. Cool weather and moisture in September may produce some green up of cool season plants that will continue to late October.

The following information is from the “Pavillion” climate station:

	<u>Minimum</u>	<u>Maximum</u>	<u>5 yrs. out of 10 between</u>
Frost-free period (days):	95	175	May 19 – September 19
Freeze-free period (days):	98	185	May 6 – October 3
Mean Annual Precipitation (inches):	2.50	12.54	

Mean annual precipitation: 7.85 inches

Mean annual air temperature: 44.53°F (30.5°F Avg. Min. to 58.5°F Avg. Max.)

For detailed information visit the Natural Resources Conservation Service National Water and Climate Center at <http://www.wcc.nrcs.usda.gov/> website. Other climate station(s) representative of this precipitation zone include “Riverton”, “Arminto”, and “Lost Cabin”.

Influencing Water Features

Wetland Description:	<u>System</u>	<u>Subsystem</u>	<u>Class</u>	<u>Sub-class</u>
None	None	None	None	None

Stream Type: None

Representative Soil Features

The soils of this site are moderately deep and very deep poorly to well-drained soils formed in alluvium. These soils have moderate to rapid permeability and are moderately to strongly saline and/or alkaline. Higher soluble salt concentrations may be found in the subsoils. The surface soil will be highly variable and vary from 2 to 8 inches in thickness. A water table if present is below 5 feet and is too deep to benefit the herbaceous species. These areas are subject to occasional overflow. The soil characteristics having the most influence on the plant community are the elimination of the water table near the surface, reduction in the potential to flood and the elevated quantities of soluble salts.

Major Soil Series correlated to this site include:

Other Soil Series correlated in MLRA 32 to this site include:

Parent Material Kind: alluvium

Parent Material Origin: sandstone, shale

Surface Texture: loam, clay loam, silt loam, clay, very fine sandy loam, fine sandy loam, sandy loam, silty clay

Surface Texture Modifier: none

Subsurface Texture Group: loam, sandy loam, fine sandy loam

Surface Fragments ≤ 3” (% Cover): 0

Surface Fragments > 3” (%Cover): 0

Subsurface Fragments ≤ 3” (% Volume): 0

Subsurface Fragments > 3” (% Volume): 0

	<u>Minimum</u>	<u>Maximum</u>
Drainage Class:	poor	well
Permeability Class:	moderate	moderately rapid
Depth (inches):	20	>60
Electrical Conductivity (mmhos/cm) $\leq 20''$:	4	16
Sodium Absorption Ratio $\leq 20''$:	8	>16
Soil Reaction (1:1 Water) $\leq 20''$:	7.4	9.0
Soil Reaction (0.1M CaCl₂) $\leq 20''$:	NA	NA
Available Water Capacity (inches) $\leq 30''$:	3.3	4.5
Calcium Carbonate Equivalent (percent) $\leq 20''$:	0	10

Plant Communities

Ecological Dynamics of the Site:

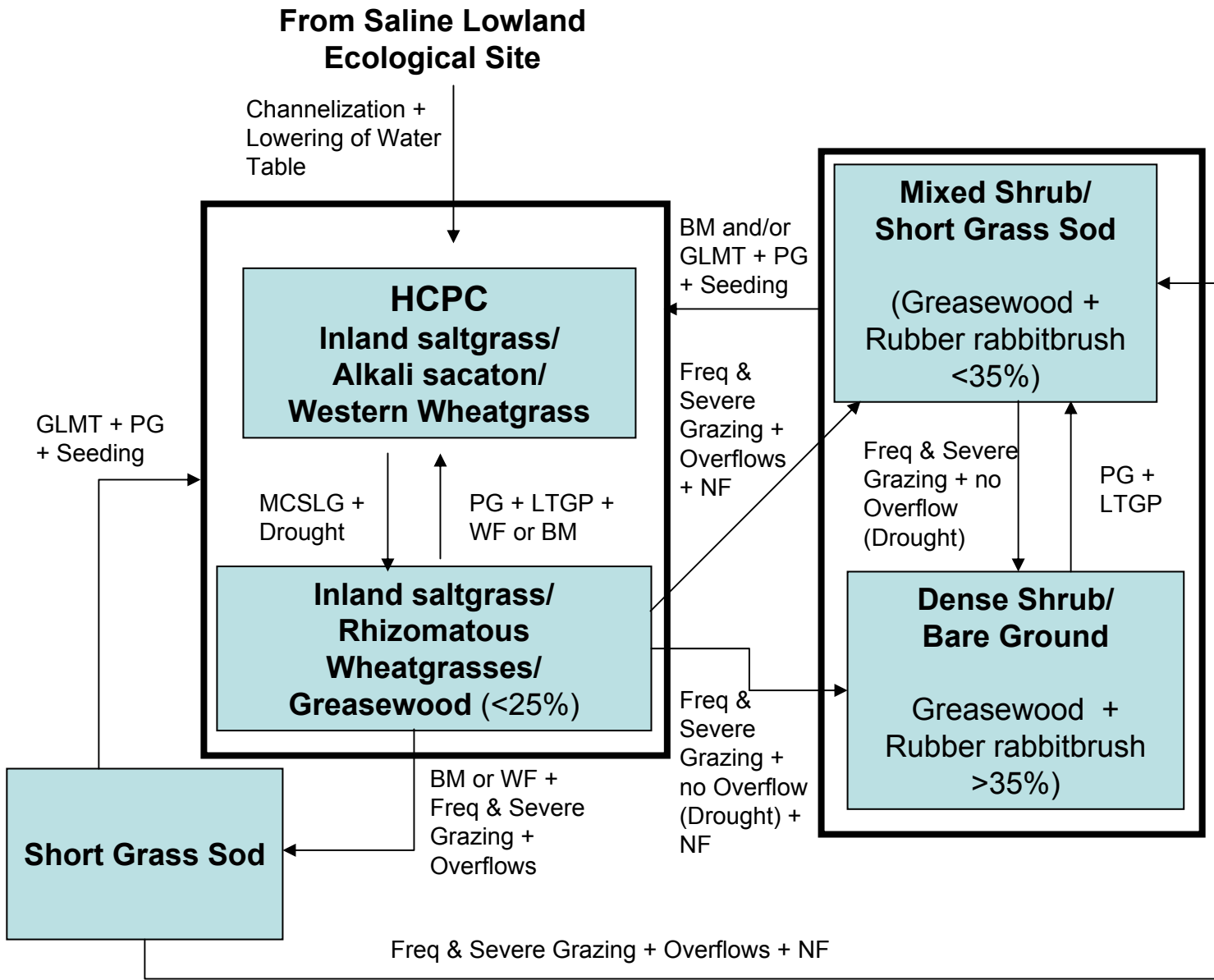
This site occurs as a direct result of a hydrologic disruption to the Saline Lowland 5-9 WR ecological site (See Saline Lowland Ecological Site Description). This disturbance, whether natural or human caused, alters the hydrologic function of a Saline Lowland to such a degree that rehabilitation is not an option. As a result, subsoil that at one time was sufficiently moist during part of the growing season is literally drained as water is now diverted to deeply incised channels. Consequently, supplemental water that was predictable and available to herbaceous plants during part of the growing year is now lacking and the water table is permanently below the rooting depth of these plants. This site, however, gets an occasional overflow from the adjacent uplands and the water table is commonly at a depth that is still beneficial to deep-rooted shrub species.

Potential vegetation on this site is dominated by tall and mid perennial grasses, which can tolerate soils with moderate amounts of salinity and alkalinity and adapt to periodic overflows. Other significant vegetation includes greasewood, Gardner's saltbush, and a variety of forbs. The expected potential composition for this site is about 70% grasses, 10% forbs and 20% woody plants. The composition and production will vary naturally due to historical use, fluctuating precipitation and fire frequency.

As this site deteriorates, species such as inland saltgrass and greasewood will increase. Weedy annuals will invade. Grasses such as alkali sacaton, rhizomatous wheatgrasses, Indian ricegrass and basin wildrye will decrease in frequency and production.

The Historic Climax Plant Community (description follows the plant community diagram) has been determined by study of rangeland relic areas, or areas protected from excessive disturbance. Trends in plant communities going from heavily grazed areas to lightly grazed areas, seasonal use pastures, and historical accounts have also been used.

The following is a State and Transition Model Diagram that illustrates the common plant communities (states) that can occur on the site and the transitions between these communities. The ecological processes will be discussed in more detail in the plant community narratives following the diagram.



- BM** - Brush Management (fire, chemical, mechanical)
- Freq. & Severe Grazing** - Frequent and Severe Utilization of the Cool-season Mid-grasses during the Growing Season
- GLMT** - Grazing Land Mechanical Treatment
- LTGP** - Long-term Prescribed Grazing
- MCSLG** - Moderate, Continuous Season-long Grazing
- NU, NF** - No Use and No Fire
- PG** - Prescribed Grazing (proper stocking rates with adequate recovery periods during the growing season)
- VLTPG** - Very Long-term Prescribed Grazing (could possibly take generations)
- WF** - Wildfire

Plant Community Composition and Group Annual Production
Reference Plant Community (HCPC)

COMMON NAME/GROUP NAME	SCIENTIFIC NAME	SYMBOL	Annual Production (Normal Year)		
			Total: 525		
			Group	lbs./acre	% Comp.
GRASSES AND GRASS-LIKES					
GRASSES/GRASSLIKES					
Inland saltgrass	Distichlis spicata	DISP	1	53 - 105	10 - 20
Alkali sacaton	Sporobolus airoides	SPAI	2	26 - 79	5 - 15
Basin wildrye	Leymus cinereus	LECI4	3	26 - 53	5 - 10
Bottlebrush squirreltail	Elymus elymoides	ELELE	4	26 - 79	5 - 15
Indian ricegrass	Achnatherum hymenoides	ACHY	5	26 - 53	5 - 10
Western wheatgrass	Pascopyrum smithii	PASM	6	26 - 79	5 - 15
MISC. GRASSES/GRASSLIKES			7	26 - 79	5 - 15
Canada wildrye	Elymus canadensis	ELCA4	7	0 - 26	0 - 5
Alkali bluegrass	Poa secunda ssp. juncifolia	POSEJ	7	0 - 26	0 - 5
Blue grama	Bouteloua gracilis	BOGR2	7	0 - 26	0 - 5
Mat muhly	Muhlenbergia richardsonis	MURI	7	0 - 26	0 - 5
other perennial grasses (native)		2GP	7	0 - 26	0 - 5
FORBS			8	0 - 53	0 - 10
Smooth woodyaster	Xylorhiza glabruiscula	XUGL	8	0 - 26	0 - 5
Wild onion	Allium textile	ALTE	8	0 - 26	0 - 5
Hood's phlox	Phlox hoodii	PHHO	8	0 - 26	0 - 5
Pursh seepweed	Suaeda calceoliformis	SUCA2	8	0 - 26	0 - 5
Povertyweed	Iva axillaris	IVAX	8	0 - 26	0 - 5
Plains pricklypear cactus	Opuntia polyacantha	OPPO	8	0 - 26	0 - 5
other perennial forbs (native)		2FP	8	0 - 26	0 - 5
TREES/SHRUBS					
Greasewood	Sarcobatus vermiculatus	SAVE4	9	26 - 79	5 - 15
Gardner's saltbush	Atriplex gardneri	ATGA	10	5 - 26	1 - 5
MISC. SHRUBS			11	5 - 53	1 - 10
Rubber rabbitbrush	Ericameria nauseosa	ERNA10	11	0 - 26	0 - 5
Green rabbitbrush	Chrysothamnus viscidiflorus	CHVI8	11	0 - 26	0 - 5
Basin big sagebrush	Artemisia tridentata tridentata	ARTRT	11	0 - 26	0 - 5
other shrubs & half shrubs (native)		2SHRUB	11	0 - 26	0 - 5

This list of plants and their relative proportions are based on near normal years. Fluctuations in species composition and relative production may change from year to year dependent upon precipitation or other climatic factors.

Plant Community Narratives

Following are the narratives for each of the described plant communities. These plant communities may not represent every possibility, but they probably are the most prevalent and repeatable plant communities. The plant composition tables shown above have been developed from the best available knowledge at the time of this revision. As more data is collected, some of these plant communities may be revised or removed, and new ones may be added. None of these plant communities should necessarily be thought of as “Desired Plant Communities”. According to the USDA NRCS National Range and Pasture Handbook, Desired Plant Communities (DPC’s) will be determined by the decision-makers and will meet minimum quality criteria established by the NRCS. The main purpose for including any description of a plant community here is to capture the current knowledge and experience at the time of this revision.

Inland Saltgrass/Alkali Sacaton/Western Wheatgrass Plant Community

The interpretive plant community for this site is the Historic Climax Plant Community. This state evolved with grazing by large herbivores and periodic fires. Potential vegetation is about 70% grasses or grass-like plants, 10% forbs and 20% woody plants. Tall and medium grasses, which can tolerate saline and/or alkali conditions and occasional overflows, dominate this plant community. The major grasses include inland saltgrass, alkali sacaton, rhizomatous wheatgrasses, bottlebrush squirreltail, basin wildrye, and Indian ricegrass. Woody plants are greasewood and Gardner’s saltbush. A variety of forbs also occurs in this state and plant diversity is high (see Plant Composition Table).

The total annual production (air-dry weight) of this state is about 525 pounds per acre, but it can range from about 350 lbs./acre in unfavorable years to about 800 lbs./acre in above average years.

The following is the growth curve of this plant community expected during a normal year:

Growth curve number:

Growth curve name:

Growth curve description:

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0	0	0	10	30	35	10	5	5	5	0	0

(Monthly percentages of total annual growth)

This state is stable and well adapted to the Northern Great Plains climatic conditions. The diversity in plant species allows for high drought resistance. This is a sustainable plant community (site/soil stability, watershed function, and biologic integrity). Typically, relic rill and gullies are visible but are now stable. No recent accelerated erosion should be occurring in this state.

Transitions or pathways leading to other plant communities are as follows:

- Moderate, continuous season-long grazing will convert this plant community to the Inland Saltgrass/Rhizomatous Wheatgrasses/Greasewood Plant community. Prolonged Drought will exacerbate this transition.

Inland Saltgrass/Rhizomatous Wheatgrasses/Greasewood Plant Community

This plant community evolved under moderate grazing by domestic livestock and low fire frequency. Saline tolerant grasses make up the majority of the understory. Dominant grasses include rhizomatous wheatgrasses, inland saltgrass, alkali bluegrass, and alkali sacaton. Forbs commonly found in this plant community include wild onion, purshe seepweed, smooth goldaster, and povertyweed. Greasewood may comprise as much as 35% of the total annual production.

When compared to the Historical Climax Plant Community, basin wildrye, Indian ricegrass, rhizomatous wheatgrasses, bottlebrush squirreltail, and alkali sacaton have decreased. Inland saltgrass, blue grama, greasewood and rubber rabbitbrush have increased.

The total annual production (air-dry weight) of this state is about 450 pounds per acre, but it can range from about 275 lbs./acre in unfavorable years to about 600 lbs./acre in above average years.

The following is the growth curve expected during a normal year:

Growth curve number:

Growth curve name:

Growth curve description:

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0	0	0	5	20	30	15	10	15	5	0	0

(Monthly percentages of total annual growth)

This state is stable and protected from excessive erosion. The herbaceous component is mostly intact and plant vigor and replacement capabilities are sufficient. Only minimal occurrences of water flow patterns and litter movement is evident. Incidence of pedestalling is minimal. Soils are mostly stable and the surface shows minimum soil loss. The watershed is functioning and the biotic community is intact.

Transitional pathways leading to other plant communities are as follows:

- Prescribed grazing and possible long-term prescribed grazing will result in a plant community very similar to the *Historic Climax Plant Community*, except that greasewood will persist without a return to a normal fire regime or some form of brush control.
- Frequent and severe grazing with brush management or wildfire will convert this plant community to the *Short Grass Sod Vegetation State*.
- Frequent and severe grazing with the occasional overflow and no fire will convert this plant community to the *Mixed Shrub/Short Grass Sod Plant Community*.
- Frequent and severe grazing with no overflow and no fire will convert this plant community to the *Dense Shrub/Bare Ground Plant Community*. Prolonged Drought will exacerbate this transition.

Mixed Shrub/Short Grass Sod Plant Community

This plant community is the result of frequent and severe grazing with periodic overflows and no fire or brush control. This plant community is dominated by a dense sod of inland saltgrass, blue grama and alkali bluegrass and includes a mosaic shrub overstory. Greasewood and rubber rabbitbrush are the dominant overstory but Gardner's saltbush is also an important shrub in this plant community. Shrubs comprise less than 35% of the annual production and are kept in check by the herbaceous sod understorey.

When compared to the Historic Climax Plant Community, the tall and medium grasses are absent. Short warm season grasses are dominant and weedy annuals are common. Shrubs will have increased as a percentage of the total production, but will not dominate as the sod prevents a

homogeneous shrub cover. Noxious weeds such as Russian knapweed are present if a seed source is available.

The total annual production (air-dry weight) of this state is about 260 pounds per acre, but it can range from about 150 lbs./acre in unfavorable years to about 400 lbs./acre in above average years.

The following is the growth curve expected during a normal year:

Growth curve number:

Growth curve name:

Growth curve description:

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0	0	0	5	25	35	20	5	5	5	0	0

(monthly percentages of total annual growth)

The sod component of this plant community is extremely resistant to change and continued frequent and severe grazing or the removal of grazing does not seem to affect the plant composition or structure of the plant community. The biotic integrity of this state is generally not functional as plant diversity is poor especially among the herbaceous species. However, the vegetative structure may still be partially intact as the shrub component is still within a reasonable percentage of the total composition.

This sod bound plant community is very resistant to water infiltration. While this sod protects the site itself, excessive runoff increases erosion on bare ground areas and worsens the channelization already present. Water flow patterns are obvious in the bare ground areas and shrubs and sod patches are pedestalled. Rill channels are noticeable in the interspaces and lateral gullies will increase. The watershed is not normally functioning, as runoff is excessive and erosional processes are accelerated.

Transitional pathways leading to other plant communities are as follows:

- Grazing land mechanical treatment (chiseling and seeding, etc.) and brush management followed by prescribed grazing and if necessary seeding will return this plant community to near *Historic Climax Plant Community*.
- Frequent and severe grazing with no overflow will convert this plant community to the *Dense Shrub/Bare Ground Sod Plant Community*. Prolonged Drought will exacerbate this transition.

Dense Shrub/Bare Ground Plant Community

This plant community evolved under frequent and severe grazing with the absence of fire. Greasewood and rubber rabbitbrush are the dominant species of this plant community. Tall and medium grasses have been eliminated. The interspaces between shrubs have expanded leaving the amount of bare ground more prevalent and more soil surface exposed to erosive elements.

The annual grasses and forbs, such as cheatgrass, foxtail barley, kochia, halogeton, and Russian thistle, make up the dominant understory along with noxious weeds such as Russian knapweed. Total annual production is mostly from shrubs and these weedy annuals.

The total annual production (air-dry weight) of this state is about 350 pounds per acre, but it can range from about 100 lbs./acre in unfavorable years to about 450 lbs./acre in above average years.

The following is the growth curve expected during a normal year:

Growth curve number:

Growth curve name:

Growth curve description:

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0	0	0	10	30	35	10	5	5	5	0	0

(monthly percentages of total annual growth)

This plant community is resistant to change as the stand becomes more decadent. These areas may actually be more resistant to fire as less fine fuels are available and the bare ground between the shrubs is increased. Continued frequent and severe grazing or the removal of grazing does not seem to affect the plant composition or structure of the plant community. Annual grasses, weedy species and bare ground compromise the biotic integrity. Plant diversity is poor and the potential for native grasses to reproduce is absent. The shift in the vegetative structure and function is extreme and the biotic integrity is lost.

Soil erosion is accelerated because of increased bare ground. Water flow patterns and pedestalling are obvious. Infiltration is reduced and runoff is increased. Rill channels may be noticeable in the interspaces and lateral gullies are numerous.

Transitional pathways leading to other plant communities are as follows:

- Prescribed grazing and possible long-term prescribed grazing will shift the vegetation to the *Mixed Shrub/Short Grass Sod* plant community
- Brush management, followed by prescribed grazing and seeding if necessary, will return this plant community at or near the HCPC. If prescribed fire is used as a means to reduce or remove the shrubs, sufficient fine fuels will need to be present. This may require deferment from grazing prior to treatment. Since both greasewood and rubber rabbitbrush are difficult to remove or control repeated treatments or a combination of treatments may be necessary. Post management is critical to ensure success. This can range from two or more years of rest to partial growing season deferment, depending on the condition of the understory at the time of treatment and the growing conditions following treatment. In the case of an intense wildfire that occurs when desirable plants are not completely dormant, the length of time required to reach the *HCPC* may be increased and seeding of natives is recommended.

Short Grass Sod Plant Community

This plant community is the result of long-term improper grazing use and fire or some form of brush management. This state is dominated by inland saltgrass, blue grama, and alkali bluegrass sod. Areas with bare ground have increased and extend between the sodded surfaces.

When compared to the Historic Climax Plant Community, the tall and medium grasses are absent. Short warm season grasses are dominant and weedy annuals are common. Noxious weeds such as Russian knapweed are present, if a seed source is available.

The total annual production (air-dry weight) of this state is about 100 pounds per acre, but it can range from about 50 lbs./acre in unfavorable years to about 200 lbs./acre in above average years.

The following is the growth curve expected during a normal year:

Growth curve number:

Growth curve name:

Growth curve description:

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0	0	0	5	20	30	15	10	15	5	0	0

(Monthly percentages of total annual growth)

This sod is extremely resistant to change and continued frequent and severe grazing or the removal of grazing does not seem to affect the plant composition or structure of the plant community. The biotic integrity of this state is not functional and plant diversity is extremely low.

This sod bound plant community is very resistant to water infiltration. While this sod protects the site itself, excessive runoff increases erosion on bare ground areas and worsens the channelization already present. Water flow patterns are obvious in the bare ground areas and pedestalling is apparent along the sod edges. Rill channels are noticeable in the interspaces and lateral gullies will increase. The watershed is not normally functioning, as runoff is excessive and erosional processes are accelerated.

Transitional pathways leading to other plant communities are as follows:

- Grazing land mechanical treatment (chiseling, etc.) followed by prescribed grazing and Reseeding native species. will return this plant community to near *Historic Climax Plant Community* condition.
- Frequent and severe grazing with the occasional overflows and no fire will convert this state to the *Mixed Shrub/Short Grass Sod Plant Community*.

Ecological Site Interpretations

Animal Community – Wildlife Interpretations

Historic Climax Plant Community: The predominance of grasses in this plant community favors grazers and mixed-feeders, such as bison, deer, and antelope. Suitable thermal and escape cover for wildlife is available as quantities of woody plants is adequate. In addition, topographical variations provide some escape cover as well. When found adjacent to sagebrush dominated states, this plant community may provide brood rearing/foraging areas for sage grouse. Other birds that would frequent this plant community include western meadowlarks, horned larks, and golden eagles as well as upland game birds. Many grassland obligate small mammals would occur here.

Inland Saltgrass/Rhizomatous wheatgrasses/greasewood Plant Community: This plant community exhibits a moderate level of plant species diversity due to the accumulation of salts in the soil. It provides both thermal and escape cover for deer and antelope especially if other woody communities are nearby. Other birds that would frequent this plant community include western meadowlarks, horned larks, and golden eagles as well as upland game birds. Many grassland obligate small mammals would occur here.

Mixed Shrub/Short Grass Sod Plant Community: These communities provide some foraging and cover for deer, antelope, and other large ungulates. This plant community, especially if proximal to other woody cover, may be used by sage grouse and other game birds for foraging and cover.

Dense Shrub/Bare Ground Plant Community: This plant community can provide important winter foraging and cover for mule deer and antelope. This community provides escape and thermal cover for large ungulates, as well as nesting habitat for sage grouse and other upland game birds.

Short Grass Sod Plant Community: This plant community may be used by the same large grazers that would use the Historic Climax Plant Community. However, the plant community composition is less diverse and productive, thus, less apt to meet the seasonal needs of these animals. It may provide some foraging opportunities for sage grouse when it occurs proximal to woody cover.

Animal Preferences (Quarterly - 1,2,3,4) for commonly occurring plants in MLRA 32XY, 5-9 inch Wind River Basin

COMMON NAME/ GROUP NAME	SCIENTIFIC NAME	SCIENTIFIC SYMBOL	Cattle	Sheep	Horses	Mule Deer	Antelope
GRASSES/GRASSLIKE							
alkali bluegrass	<i>Poa secunda</i> ssp. <i>juncifolia</i>	POSEJ	DDDD	PPPP	DDDD	PPPP	PPPP
alkali cordgrass	<i>Spartina gracilis</i>	SPGR	DDDD	UUUU	DDDD	UUUU	UUUU
alkali sacaton	<i>Sporobolus airoides</i>	SPAI	PPPP	DDDD	PPPP	DDDD	DDDD
American manna grass	<i>Glyceria grandis</i>	GLGR	DDDD	UUUU	DDDD	UUUU	UUUU
American sloughgrass	<i>Beckmannia syzigachne</i>	BESY	DDDD	UUUU	DDDD	UUUU	UUUU
Baltic rush	<i>Juncus balticus</i>	JUBA	DDDD	UUUU	DDDD	UUUU	UUUU
basin wildrye	<i>Leymus cinereus</i>	LEC4	PPPP	PPPP	PPPP	DDDD	DDDD
beaked sedge	<i>Carex rostrata</i>	CARO6	DDDD	UUUU	DDDD	UUUU	UUUU
bearded wheatgrass	<i>Elymus caninus</i>	ELCA	PPPP	DDDD	PPPP	DDDD	DDDD
big bluegrass	<i>Poa ampla</i> (syn. to <i>Poa secunda</i>)	POAM (POSE)	PPPP	PPPP	PPPP	PPPP	PPPP
blue grama	<i>Bouteloua gracilis</i>	BOGR2	DDDD	DDDD	DDDD	DDDD	DDDD
bluebunch wheatgrass	<i>Pseudoroegneria spicata</i>	PSSP6	PPPP	PPPP	PPPP	DDDD	DDDD
bottlebrush squirreltail	<i>Elymus elymoides</i>	ELELE	DDDD	DDDD	DDDD	UUUU	UUUU
bulrush	<i>Scirpus</i> spp.	SCIRP	DDDD	UUUU	DDDD	UUUU	UUUU
Canada wildrye	<i>Elymus canadensis</i>	ELCA4	PPPP	PPPP	PPPP	DDDD	DDDD
Fendler threeawn	<i>Aristida purpurea longiseta</i>	ARFUL	UUUU	UUUU	UUUU	UUUU	UUUU
Indian ricegrass	<i>Achnatherum hymenoides</i>	ACHY	PPPP	PPPP	PPPP	PPPP	PPPP
inland saltgrass	<i>Distichlis spicata</i>	DISP	UUUU	UUUU	UUUU	UUUU	UUUU
little bluestem	<i>Schizachyrium scoparium</i>	SCSC	PPPP	PPPP	PPPP	DDDD	DDDD
mat muhly	<i>Muhlenbergia richardsonis</i>	MURI	UUUU	UUUU	UUUU	UUUU	UUUU
Nebraska sedge	<i>Carex nebrascensis</i>	CANE2	PPPP	PPPP	PPPP	DDDD	DDDD
needleandthread	<i>Hesperostipa comata</i>	HECO26	PPPP	PPPP	PPPP	PPPP	PPPP
northern reedgrass	<i>Calamagrostis stricta</i>	CAST13	PPPP	DDDD	PPPP	UUUU	UUUU
Nuttall's alkali grass	<i>Puccinellia nuttalliana</i>	PUNU2	PPPP	PPPP	PPPP	PPPP	PPPP
plains reedgrass	<i>Calamagrostis montanensis</i>	CAMO	DDDD	DDDD	DDDD	DDDD	DDDD
prairie cordgrass	<i>Spartina pectinata</i>	SPPE	PPPP	DDDD	PPPP	UUUU	UUUU
prairie junegrass	<i>Koeleria macrantha</i>	KOMA	DDDD	DDDD	DDDD	DDDD	DDDD
prairie sandreed	<i>Calamovilfa longifolia</i>	CALO	PPPP	DDDD	PPPP	UUUU	UUUU
reed canarygrass	<i>Phalaris arundinacea</i>	PHAR3	DDDD	UUUU	DDDD	UUUU	UUUU
rush	<i>Juncus</i> spp.	JUNCU	DDDD	UUUU	DDDD	UUUU	UUUU
sand dropseed	<i>Sporobolus cryptandrus</i>	SPCR	DDDD	DDDD	DDDD	UUUU	UUUU
Sandberg bluegrass	<i>Poa secunda</i>	POSE	DDDD	DDDD	DDDD	DDDD	DDDD
slender wheatgrass	<i>Elymus trachycaulis</i>	ELTR7	PPPP	DDDD	PPPP	DDDD	DDDD
spike sedge	<i>Carex nardina</i>	CANA2	DDDD	DDDD	DDDD	UUUU	UUUU
thickspike wheatgrass	<i>Elymus lanceolatus</i>	ELLAL	DDDD	DDDD	DDDD	DDDD	DDDD
threadleaf sedge	<i>Carex filifolia</i>	CAFI	DDDD	DDDD	DDDD	DDDD	PPPP
tufted hairgrass	<i>Deschampsia caespitosa</i>	DECA18	PPPP	PPPP	PPPP	DDDD	DDDD
water sedge	<i>Carex aquatilis</i>	CAAQ	DDDD	UUUU	DDDD	UUUU	UUUU
western wheatgrass	<i>Pascopyrum smithii</i>	PASM	DDDD	DDDD	DDDD	DDDD	DDDD
FORBS							
American licorice	<i>Glycyrrhiza lepidota</i>	GLLE3	UUUU	UUUU	UUUU	UUUU	UUUU
American vetch	<i>Vicia americana</i>	VIAM	PPPP	PPPP	PPPP	PPPP	PPPP
arrowgrass	<i>Triglochin</i> spp.	TRIGL	T	T	T	T	T
asters	<i>Aster</i> spp.	ASTER	UUUU	UUUU	UUUU	UUUU	UUUU
badlands mule-ears	<i>Wyethia scabra</i>	WYSC	UUUU	UUUU	UUUU	UUUU	UUUU
beaked skeletonweed	<i>Shinnersoseris rostrata</i>	SHRO2	UUUU	UUUU	UUUU	UUUU	UUUU
biscuitroots	<i>Lomatium</i> spp.	LOMAT	DDDD	DDDD	UUUU	DDDD	DDDD
blue-eyed grass	<i>Sisyrinchium</i> spp.	SISYR	DDDD	PPPP	DDDD	DDDD	DDDD
breadroot scurfpea	<i>Pediomelum esculentum</i>	PEES	DDDD	DDDD	DDDD	DDDD	DDDD
buttercandle	<i>Cryptantha celosiodes</i>	CRCE	UUUU	UUUU	UUUU	UUUU	UUUU
cattail, broad-leaf	<i>Typha latifolia</i>	TYLA	DDDD	UUUU	DDDD	UUUU	UUUU
cattail, narrow-leaf	<i>Typha angustifolia</i>	TYAN	DDDD	UUUU	DDDD	UUUU	UUUU
desert princeplume	<i>Stanleya pinnata</i>	STPIP	T	T	T	T	T
Douglas' dusty maid	<i>Chaenactis douglasii</i>	CHDO	UUUU	UUUU	UUUU	UUUU	UUUU
fleabane	<i>Erigeron</i> spp.	ERUUU	UUUU	UUUU	UUUU	UUUU	UUUU
foothills deathcamas	<i>Zigadenus paniculatus</i>	ZIPA2	T	T	T	T	T
fringed sagewort	<i>Artemisia frigida</i>	ARFR4	UUUU	UUUU	UUUU	UUUU	UUUU
green sagewort	<i>Artemisia dracuncul</i>	ARDR4	UUUU	UUUU	UUUU	UUUU	UUUU
hawkbeard	<i>Crepis acuminata</i>	CRAC2	UUUU	PPPP	UUUU	DDDD	DDDD
horsetails	<i>Equisetum</i> spp.	EQUIS	UUUU	UUUU	UUUU	UUUU	UUUU
Indian paintbrush	<i>Castilleja</i> spp.	CASTI2	DDDD	DDDD	DDDD	DDDD	DDDD
iris	<i>Iris</i> spp.	IRIS	UUUU	UUUU	UUUU	UUUU	UUUU
larkspur	<i>Delphinium</i> spp.	DELPH	DDDD	DDDD	DDDD	DDDD	DDDD
licorice-root	<i>Ligusticum</i> spp.	LIGUS	UUUU	UUUU	UUUU	UUUU	UUUU
lupine	<i>Lupinus</i> spp.	LUPIN	DDDD	T	DDDD	DDDD	DDDD
milkvetch	<i>Astragalus</i> spp.	ASTRA	DDDD	DDDD	DDDD	DDDD	DDDD
miner's candle	<i>Cryptantha virgata</i>	CRV14	UUUU	UUUU	UUUU	UUUU	UUUU
mustard	<i>Brassica</i> spp.	BRASS2	UUUU	UUUU	UUUU	UUUU	UUUU
nailwort	<i>Paronychia</i> spp.	PARON	UUUU	UUUU	UUUU	UUUU	UUUU
Nuttall's povertyweed	<i>Monolepis nuttalliana</i>	MONU	UUUU	UUUU	UUUU	UUUU	UUUU
penstemon	<i>Penstemon</i> spp.	PENST	PPPP	PPPP	PPPP	PPPP	PPPP
phlox	<i>Phlox</i> spp.	PHLOX	UUUU	UUUU	UUUU	UUUU	UUUU
plains springparsley	<i>Cymopterus acaulis</i>	CYAC	UUUU	DDDD	UUUU	UUUU	UUUU
poison hemlock	<i>Conium maculatum</i>	COMA2	T	T	T	T	T
prairie bluebells	<i>Mertensia lanceolata</i>	MELA3	DDDD	PPPP	DDDD	DDDD	DDDD
Pursh seepweed	<i>Suaeda calceoliformis</i>	SUCA2	UUUU	UUUU	UUUU	UUUU	UUUU
rosy pussytoes	<i>Antennaria rosea</i>	ANRO2	UUUU	UUUU	UUUU	UUUU	UUUU
sandwort	<i>Arenaria</i> spp.	ARENA	UUUU	UUUU	UUUU	UUUU	UUUU
silverweed cinquefoil	<i>Argentina anserina</i>	ARAN7	UUUU	UUUU	UUUU	UUUU	UUUU
stemless goldenweed	<i>Haplopappus acaulis</i>	HAAC	UUUU	UUUU	UUUU	UUUU	UUUU
sulphur flower buckwheat	<i>Eriogonum umbellatum</i>	ERUM	UUUU	UUUU	UUUU	UUUU	UUUU
tufted evening-primrose	<i>Oenothera caespitosa</i>	OECA10	UUUU	UUUU	UUUU	UUUU	UUUU
twogrooved milkvetch	<i>Astragalus bisulcatus</i>	ASB12	T	T	T	T	T
water hemlocks	<i>Cicuta</i> spp.	CICUT	T	T	T	T	T
western buttercup	<i>Ranunculus occidentalis</i>	ROAOC	DDDD	DDDD	DDDD	DDDD	DDDD
western dock	<i>Rumex aquaticus</i>	RUAQ	UUUU	UUUU	UUUU	UUUU	UUUU
western yarrow	<i>Achillea lanulosa</i>	ACHIL	UUUU	UUUU	UUUU	UUUU	UUUU
wild onion	<i>Allium textile</i>	ALTE	DDDD	DDDD	DDDD	DDDD	DDDD
woodyaster	<i>Xylorhiza</i> spp.	XYLOR	T	T	T	T	T
woolly plantain	<i>Plantago patagonica</i>	PLPA2	UUUU	UUUU	UUUU	UUUU	UUUU

TREES, SHRUBS & HALF-SHRUBS							
big sagebrush	Artemisia tridentata	ARTR2	UUUU	DDDD	UUUU	DDDD	DDDD
birdfoot sagebrush	Artemisia pedatifida	ARPE6	UUUU	UUUU	UUUU	UUUU	UUUU
black greasewood	Sarcobatus vermiculatus	SAVE4	DDDD	DDDD	UUUU	DDDD	DDDD
black sagebrush	Artemisia nova	ARNO4	DDDD	PPPP	UUUU	PPPP	PPPP
broom snakeweed	Gutierrezia sarothrae	GUSA2	UUUU	UUUU	UUUU	UUUU	UUUU
bud sagebrush	Picrothamnus desertorum	PIDE4	PPPP	PPPP	DDDD	PPPP	PPPP
fourwing saltbush	Atriplex canescens	ATCA2	PPPP	PPPP	PPPP	PPPP	PPPP
Gardners saltbush	Atriplex gardneri	ATGA	PPPP	PPPP	DDDD	PPPP	PPPP
green rabbitbrush	Chrysothamnus viscidiflorous	CHV18	DDDD	DDDD	DDDD	DDDD	DDDD
plains cottonwood (sprouts)	Populus deltoides	PODEM	DDDD	DDDD	DDDD	DDDD	DDDD
Rocky Mountain juniper	Juniperus scopulorum	JUSC2	UUUU	UUUU	UUUU	DDDD	UUUU
rubber rabbitbrush	Ericameria nauseosa	ERNA10	UUUU	DDDD	UUUU	DDDD	DDDD
shadscale saltbush	Atriplex confertifolia	ATCO	UUUU	UUUU	UUUU	UUUU	UUUU
shortspine horsebrush	Tetradymia spinosa	TESP2	UUUU	UUUU	UUUU	UUUU	UUUU
silver sagebrush	Artemisia cana	ARCAC5	DDDD	DDDD	DDDD	PPPP	PPPP
silverberry	Eleagnus commutata	ELCO	UUUU	UUUU	UUUU	DDDD	UUUU
skunkbush sumac	Rhus trilobata	RHTR	DDDD	DDDD	DDDD	DDDD	DDDD
spiny hopsage	Grayia spinosa	GRSP	UUUU	UUUU	UUUU	UUUU	UUUU
Utah juniper	Juniperus osteosperma	JUOS	UUUU	UUUU	UUUU	DDDD	UUUU
wax currant	Ribes cereum	RICE	UUUU	UUUU	UUUU	DDDD	DDDD
western snowberry	Symphoricarpos occidentalis	SYOC	UUUU	UUUU	UUUU	DDDD	UUUU
wildrose	Rosa woodsii var. woodsii	ROWOW	DDDD	DDDD	UUUU	DDDD	DDDD
willows	Salix spp.	SALIX	PPPP	PPPP	DDDD	PPPP	UUUU
winterfat	Krascheninnikovia lanata	KRLA2	PPPP	PPPP	PPPP	PPPP	PPPP
yucca	Yucca glauca	YUGL	DDDD	DDDD	DDDD	DDDD	DDDD

N = not used; U = undesirable; D = desirable; P = preferred; T = toxic

Animal Community – Grazing Interpretations

The following table lists suggested stocking rates for cattle under continuous season-long grazing under normal growing conditions. These are conservative estimates that should be used only as guidelines in the initial stages of the conservation planning process. Often, the current plant composition does not entirely match any particular plant community (as described in this ecological site description). Because of this, a field visit is recommended, in all cases, to document plant composition and production. More precise carrying capacity estimates should eventually be calculated using this information along with animal preference data, particularly when grazers other than cattle are involved. Under more intensive grazing management, improved harvest efficiencies can result in an increased carrying capacity. If distribution problems occur, stocking rates must be reduced to maintain plant health and vigor.

Plant Community	Production (lb./ac)	Carrying Capacity* (AUM/ac)
Historic Climax Plant Community	350-800	.20
Inland Saltgrass/R. Wheatgrasses/Greasewood	275-600	.17
Mixed Shrub/Short Grass Sod	150-400	.10
Dense Shrub/Bare Ground	100-450	.05
Short Grass Sod	50-200	.05

* - Continuous, season-long grazing by cattle under average growing conditions.

Grazing by domestic livestock is one of the major income-producing industries in the area. Rangeland in this area may provide yearlong forage for cattle, sheep, or horses. During the dormant period, the forage for livestock use needs to be supplemented with protein because the quality does not meet minimum livestock requirements.

Hydrology Functions

Water is the principal factor limiting forage production on this site. This site is dominated by soils in hydrologic group B and C, with localized areas in hydrologic group D. Infiltration ranges from moderate to rapid. Runoff potential for this site varies from moderate to high depending on soil hydrologic group and ground cover. In many cases, areas with greater than 75% ground cover have the greatest potential for high infiltration and lower runoff. An example of an exception would be where short-grasses form a strong sod and dominate the site. Areas where ground cover is less than 50% have the greatest potential to have reduced infiltration and higher runoff (refer to Part 630, NRCS National Engineering Handbook for detailed hydrology information).

Rills and gullies should not typically be present with the exception of relics, which should now be stabilized. Water flow patterns should be barely distinguishable if at all present. Pedestals are only slightly present in association with bunchgrasses. Litter typically falls in place, and signs of movement are not common. Chemical and physical crusts may be present. Cryptogamic crusts are present, but only cover 1-2% of the soil surface.

Recreational Uses

This site provides hunting opportunities for upland game species. The wide variety of plants which bloom from spring until fall have an esthetic value that appeals to visitors.

Wood Products

No appreciable wood products are present on the site.

Other Products

None noted.

Supporting Information

Associated Sites

Lowland	032XY228WY
Saline Upland	032XY244WY
Clayey	032XY204WY

Similar Sites

() – Saline Lowland-Drained 10-14" Foothills and Basins East P.Z., 032XY340WY has higher production than Saline lowland-Drained 5-9" WR.

Inventory Data References (narrative)

Information presented here has been derived from NRCS inventory data. Field observations from range trained personnel were also used. Those involved in developing this site include: Chris Krassin, Range Management Specialist, NRCS and Everett Bainter, Range Management Specialist, NRCS. Other sources used as references include USDA NRCS Water and Climate Center, USDA NRCS National Range and Pasture Handbook, USDI and USDA Interpreting Indicators of Rangeland Health Version 3, and USDA NRCS Soil Surveys from various counties.

Inventory Data References

Ocular field estimations observed by trained personnel.

State Correlation

The site occurs entirely in Wyoming.

Type Locality

Field Offices

Casper, Lander, Riverton, Dubious, Fort Washakie

Relationship to Other Established Classifications

Other References

Site Description Approval

State Range Management Specialist

Date